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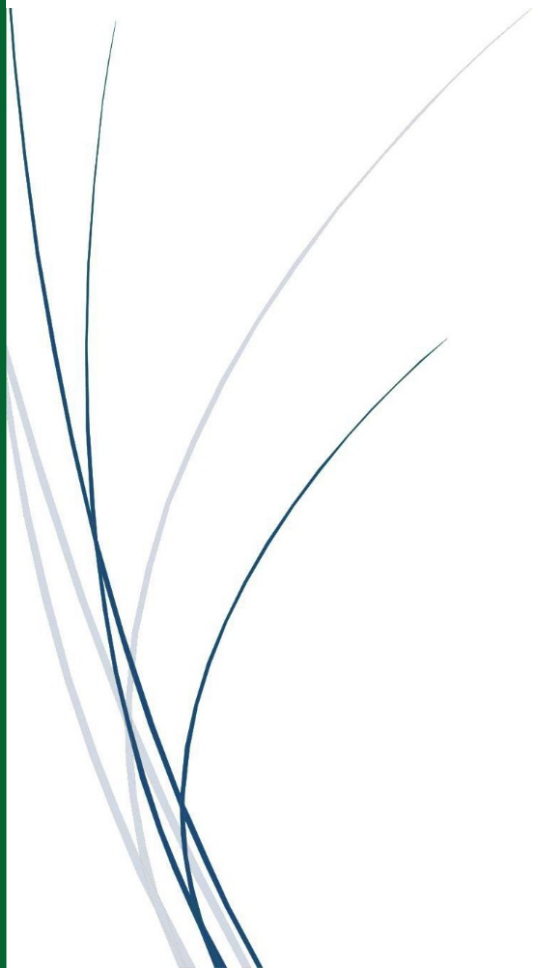
12/23/2020

Santee Cooper
2020 Integrated Resource Plan



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December 23, 2020

VIA ELECTRONIC FILING

Ms. Dawn Hipp
Chief Operating Officer
Office of Regulatory Staff
1401 Main Street, Suite 900
Columbia, SC 29201

RE: Integrated Resource Plan (2020) of the South Carolina Public Service Authority

Dear Ms. Hipp,

Santee Cooper is pleased to submit the attached 2020 Integrated Resource Plan Report of the South Carolina Public Service Authority (Santee Cooper). At the direction of the Executive Director of the Office of Regulatory Staff, Santee Cooper is submitting through you the attached report for consideration by the State Energy Office of South Carolina. This 2020 IRP Report documents analyses prepared by and plans developed by Santee Cooper in accordance with Section 58-37-40 of the South Carolina Code to develop a long-term plan of loads, resources, needs, and costs for the Santee Cooper system. Through its 2020 IRP, Santee Cooper has identified a twenty-year plan for a diverse and reliable portfolio of resources that incorporates innovative technologies, improves operating efficiency, and reduces environmental impacts for the benefit of Santee Cooper's retail and wholesale customers.

In developing its 2020 IRP, Santee Cooper recognizes that Section 11 of Act 135 of the General Assembly prohibits Santee Cooper from certain activities with respect to constructing new facilities, among other things. In light of such prohibition, Section 8 of this report, Short-Term Action Plan, identifies a list of activities in which Santee Cooper is currently engaged to advance its 2020 IRP, to the extent permitted by Act 135, and a list of future activities, some of which may require that Santee Cooper seek review and approval under Act 135. Santee Cooper has developed an IRP that both respects the limitations put in place by Act 135 and uses industry-accepted practices to describe a long-term resource plan that can reliably and economically serve the customers of Santee Cooper through the implementation of a diverse, flexible, innovative, and environmentally responsible portfolio of resources.

It should also be noted that Santee Cooper prepared its 2020 IRP subsequent to the execution of Act 135 on May 18, 2020, resulting in a compressed schedule for IRP development. While Santee Cooper engaged with Central Electric Power Cooperative throughout the development of its 2020 IRP, time did not permit engagement of other Santee Cooper customers or community stakeholders. Santee Cooper intends to develop and execute a stakeholder engagement process as part of its next IRP filing. As Santee Cooper continues to develop its IRP process, we look forward to working with the Energy Office to obtain its advice and consultation.

If you have any questions, please do not hesitate to contact me.

Sincerely,

Charlie Duckworth
Deputy CEO & Chief Planning & Innovation Officer

cc: Nanette S. Edwards, Executive Director, Office of Regulatory Staff

2020 Integrated Resource Plan
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Section 1
Executive Summary

Santee Cooper is South Carolina's state-owned electric and water utility, created in 1934 as a rural electrification and public works project. Santee Cooper's primary business is the production, transmission, and distribution of electrical energy, both at wholesale and retail, to serve approximately two million South Carolinians in all 46 counties of the State. Territorial load requirements for 2019 totaled 23,644 gigawatt-hours, with a winter peak demand of 4,583 megawatts. Santee Cooper currently meets its typical winter peak load requirements with firm power supply from its own generating resources totaling 5,338 megawatts and firm power contracts totaling 471 megawatts. Santee Cooper's current mix of resources is depicted in Table 1-1.

Table 1-1
Current Santee Cooper Power Supply Resources

	Winter Capability (MW)	Percent of Total
Coal	3,530	60.8
Natural Gas and Oil	1,315	22.6
Nuclear	322	5.5
Owned Hydro Generation	142	2.5
Landfill Methane Gas	29	0.5
Solar[(1)]	0	0.0
Total Owned Resources	5,338	91.9
Purchases[(1)]	471	8.1
Total Resources	5,809	100.0

(1) Santee Cooper currently owns or purchases approximately eight megawatts of solar resources (nameplate capacity) that do not contribute firm capacity at the time of the winter peak.

Beginning with its Reform Plan submitted to the Department of Administration in November 2019 pursuant to Act 95 of the General Assembly and continuing through this 2020 Integrated Resource Plan (2020 IRP), Santee Cooper is committed to implementing a power supply roadmap to achieve a more diversified and environmentally sustainable power supply portfolio. To reach its goals, Santee Cooper has adopted the following resource planning principles.

- **Reliability:** Operate and plan the Santee Cooper system to ensure that all retail and wholesale customers are provided reliable electric power — reliability is the number one product of any electric utility
- **Customer Focus:** Provide safe, reliable, and affordable power, and provide customers with new opportunities as markets change
- **Cost Management:** Develop resource plans that provide effective cost management over the long-term

- **Environmental Stewardship:** Responsibly manage the environmental impact of Santee Cooper operations
- **Long-Term View:** Develop a long-term resource strategy to ensure flexibility and optionality over a wide range of possible future conditions
- **Reduce Financial and Planning Risk:** Develop resource plans that readily adapt as future conditions change and, when possible, add resources in increments that closely match resources to needs
- **Embrace Innovation:** Identify potential developing technologies and incorporate in resource plans when reasonable and cost-effective
- **Transparency:** Engage customers, stakeholders, Board Members, and elected officials in a transparent resource planning process that is responsive to questions and input

Overall, Santee Cooper's goal is to create a diverse and reliable portfolio of resources that incorporates innovative technologies, improves operating efficiency, reduces environmental impacts, and results in lower overall cost. Santee Cooper's roadmap to transform its power supply portfolio represents a dramatic evolution from a coal-heavy generating portfolio to one more dependent on sustainable and lower-emitting resources. Additionally, the power supply roadmap incorporates significant flexibility to address changing future market conditions and to minimize Santee Cooper's capital spending.

Initially, Santee Cooper is focused on the following strategic directions for its future power supply plans.

- Retire coal resources to the extent cost-effective
- Increase utilization of resources that reduce environmental impacts
- Plan for a diversified, low-cost resource portfolio
- Increase solar resource implementation
- Incorporate advanced technologies like battery energy storage
- Encourage demand-side management and demand response implementation
- Ensure system reliability

Through this 2020 IRP, Santee Cooper has identified a power supply roadmap that will transform its power supply portfolio to achieve these strategic initiatives. This plan, the Preferred Resource Plan, as summarized below and described more fully in Section 7 of this report, was developed based on the assumptions, results, and conclusions of the analyses conducted for this 2020 IRP and is intended to depict a reasonable representation of future resource development for Santee Cooper. However, other than the initiatives outlined in Section 8, Short-Term Action Plan, Santee Cooper has not made any final decisions with respect to specific resources or development of specific generation sites.

Central Electric Power Cooperative (Central) participated throughout the development of Santee Cooper's 2020 IRP. Central's staff and its experts participated in numerous meetings to develop key assumptions, identify relevant scenarios, and review preliminary and final results.

The Preferred Resource Plan includes the following.

- Retire 1,150 megawatts of coal resources at the Winyah Generating Station through a phased approach (idling Unit 4 by the winter of 2020/2021, idling Unit 3 by the winter of 2021/2022, and fully retiring all four Winyah coal units by 2027)
- Add 500 megawatts of new solar resources by 2023 through a request for proposals process (amount permitted by Act 135), and plan for an additional 1000 megawatts of solar resources by 2032
- Add 200 megawatts of utility-scale battery storage to the Santee Cooper system in phases (50 megawatts by 2026, 100 megawatts by 2033, and 200 megawatts by 2036)
- Incorporate new natural gas resources into the portfolio, including: adding 552 megawatts of capacity from a combined cycle resource targeted for 2027, identifying opportunities for long-term purchases to flexibly meet future load growth and resource need, and engaging in market energy purchases, when economic, to further diversify power supply
- Implement demand response programs, consisting of direct load control, voltage control, and other measures, to avoid approximately 85 megawatts of winter peak load by 2027, increasing to 106 megawatts by 2034
- Ensure system reliability by upgrading the transmission system to accommodate resource additions and adding quick-start peaking generating resources near the Santee Cooper retail load centers

With these changes, the Preferred Resource Plan would change Santee Cooper's power supply mix, as depicted by the following figures. Figure 1-1 illustrates the projected supply and demand balance for the Preferred Resource Plan, demonstrating increased diversity of resource types and close alignment of future resource additions to projected load requirements.

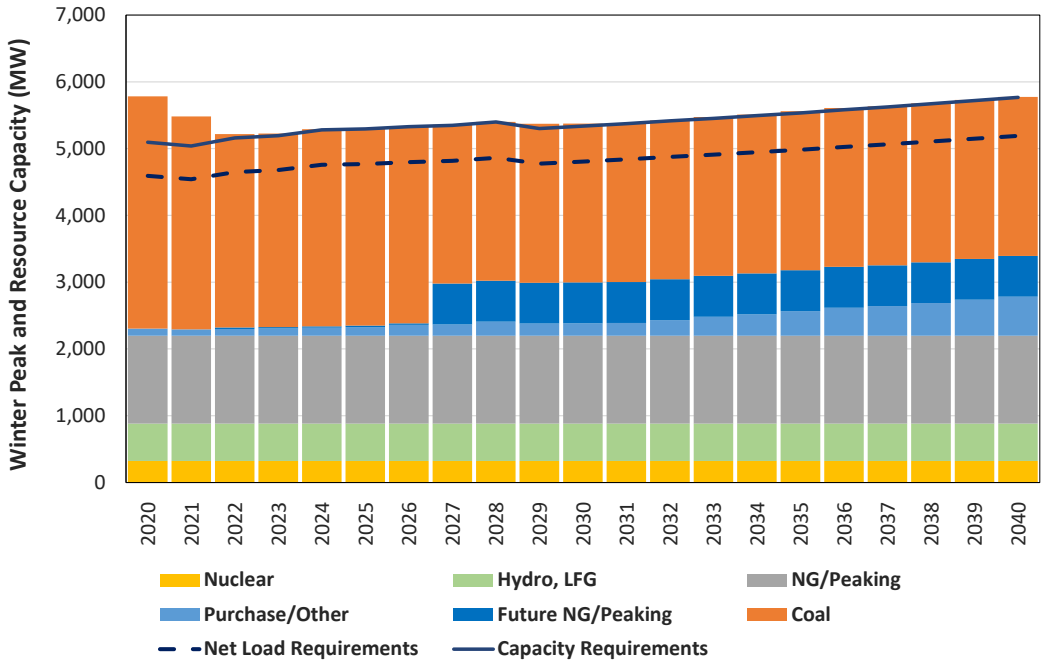

Figure 1-1: Supply and Demand Balance of Preferred Resource Plan

Figure 1-2 illustrates the changes in Santee Cooper's projected energy generation mix for the year 2033 resulting from its Reform Plan and projected for the Preferred Resource Plan, indicating significant improvement in the diversity of energy sources used to meet Santee Cooper's retail and wholesale energy requirements.

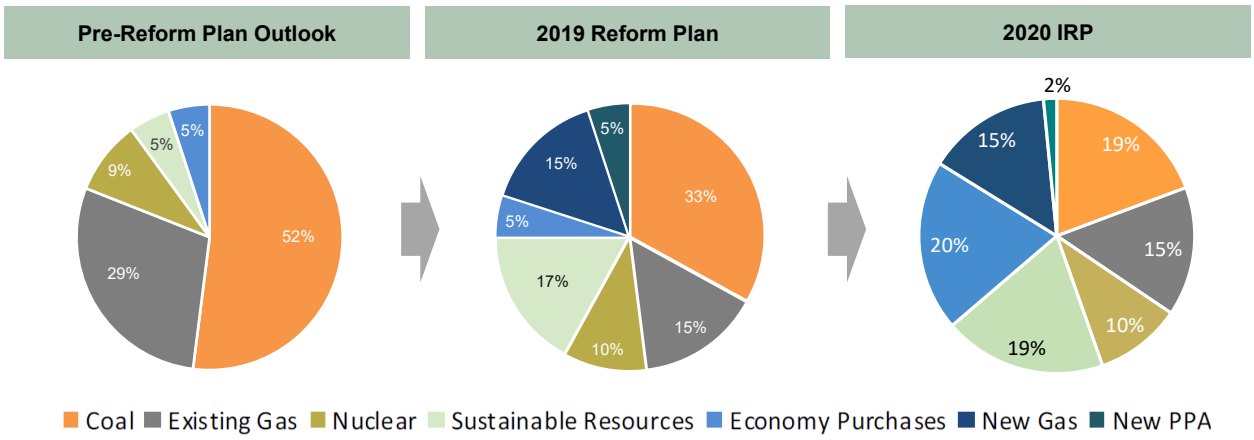

Figure 1-2: Evolution of Projected Santee Cooper Generation Mix for 2033

Figure 1-3 illustrates the improvement in Santee Cooper's carbon dioxide (CO_2) emissions profile projected for its Reform Plan and projected additional improvements under the Preferred Resource Plan, indicating an over 50 percent improvement since 2005.

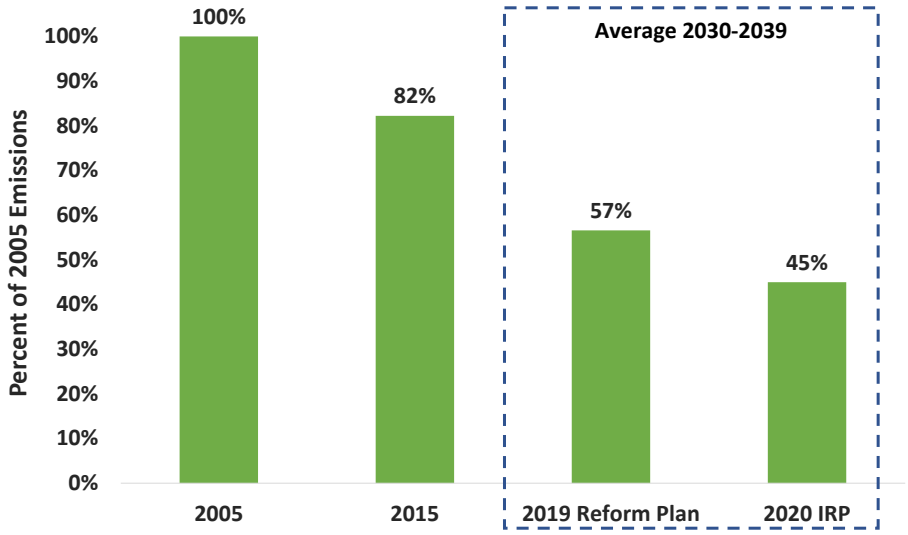

Figure 1-3: Projected CO_2 Emissions of the Santee Cooper System

The IRP Report provides additional context and detail regarding assumptions, processes, and the results of Santee Cooper's 2020 IRP. The following major topics are summarized in the report, by report section title.

- **Overview of Santee Cooper** — Overview of the Santee Cooper system, including a summary of Santee Cooper and its customers, resources, transmission interconnections, and service area.

- **Santee Cooper IRP Process** — Discussion of the process utilized by Santee Cooper in developing its 2020 IRP, including foundational principles, legislative requirements and considerations, and an overview of the functional process Santee Cooper used to prepare the 2020 IRP.
- **Santee Cooper Load Forecast** — Review of the process and projections developed for the load forecast utilized for the 2020 IRP, including forecasts of customers and sales for Santee Cooper's retail customers, load forecasts developed by Central for its member cooperatives, projected energy requirements and peak demand for Santee Cooper's other wholesale sales, and aggregate system requirements over 2020-2039.
- **Demand-Side Resource Plans** — Description of Santee Cooper's existing residential, commercial, load management, and informational demand-side management programs, including summaries of program expenditures and estimate of load reductions, and Santee Cooper plans for future development of demand response, electric vehicle, and commercial and residential energy efficiency programs.
- **Santee Cooper 2020 IRP Development** — Detailed discussion of the methodology and assumptions utilized for the development 2020 IRP, including a discussion of the process, models, portfolio evaluation approach, and sensitivity analyses utilized for the IRP, plus documentation of assumptions for cost escalation, financial assumptions, system load forecast, fuel price forecasts, power market price forecast, Santee Cooper existing generating and purchase power resources, existing Santee Cooper supply-demand balance, generating resource expansion options, and transmission system considerations.
- **IRP Results & Conclusions** — Summary of the results and conclusions of the 2020 IRP, including discussions of the resource expansion analysis process; presentation of the results of the resource expansion analysis, including projected costs and resource expansion portfolios under base case and sensitivity assumptions; and conclusions and development of a Santee Cooper preferred resource plan derived from the results of the IRP analysis.
- **Short-Term Action Plan** — Summary of activities to be undertaken by Santee Cooper over the next five years to develop the Preferred Resource Plan, and a discussion of additional future activities that Santee Cooper intends to undertake to further study and develop its resource plans and future IRP filings.
- **Transmission System Planning (Appendix A)** — Summary of Santee Cooper transmission system planning process and schedule of transmission capital projects.
- **Environmental Compliance Planning (Appendix B)** — Summary of environmental regulations and permitting requirements affecting Santee Cooper's facilities and discussion of actions and compliance of Santee Cooper, including regulations and requirements relating to airborne pollution, discharge of pollutants into waters, and disposal of solid and hazardous wastes.

Section 2
Overview of Santee Cooper

Santee Cooper is South Carolina's state-owned electric and water utility. Known formally as the South Carolina Public Service Authority (Santee Cooper or the Authority), Santee Cooper was created in 1934 as a rural electrification and public works project. Santee Cooper generated its first electricity in February 1942. Santee Cooper's primary business operation is the production, transmission, and distribution of electrical energy, both at wholesale and retail, to citizens of the State, which is the focus of this IRP Report. Santee Cooper is one of the nation's largest municipal wholesale utilities, serving directly or indirectly approximately two million South Carolinians in all 46 counties of the State.

Santee Cooper owns and operates 2,994 miles of distribution lines and associated facilities through which it serves approximately 189,000 residential, commercial, and small industrial retail customers in its assigned retail service territory, which consists of two non-contiguous areas covering portions of Berkeley, Georgetown, and Horry counties. Additionally, Santee Cooper serves 27 large industrial retail customers, several Central member cooperatives, and two municipal electric systems located in South Carolina, the Town of Bamberg and the City of Georgetown, all of which are directly interconnected to the Santee Cooper transmission system.

Central is an association of 20 electric distribution cooperatives, including the five electric distribution cooperatives that were formerly members of Saluda River Electric Cooperative, Inc. Central serves primarily residential, small commercial, and industrial customers in all 46 counties of the State. Santee Cooper supplies the total power and energy requirements of Central, less amounts which Central purchases directly from the Southeastern Power Administration (SEPA), amounts provided by Duke Energy Carolinas, LLC (Duke Energy Carolinas), a subsidiary of Duke Energy Corporation (DEC), as described below, and small amounts purchased from others.

In addition, Santee Cooper provides off-system wholesale sales to the City of Seneca, South Carolina, Piedmont Municipal Power Agency, Alabama Municipal Electric Authority, the Town of Waynesville, North Carolina, and the Charleston Navy Base.

Santee Cooper plans for firm power supply from its own generating capacity and firm power contracts to equal its firm load, including a 15 percent summer peak reserve margin and a 12 percent winter peak reserve margin. Santee Cooper owns generation facilities with current total maximum continuous ratings of 5,110 megawatts during the summer and 5,338 megawatts during the winter. In addition, Santee Cooper has entered into various power purchase arrangements through which Santee Cooper purchases 471 megawatts of firm capacity and associated energy. The territorial peak demand for 2019 was 4,583 megawatts, which occurred January 22, 2019. Santee Cooper typically peaks during the winter season.

Table 2-1, below, details the winter capability of Santee Cooper's resources by primary energy source.

Table 2-1
Current Santee Cooper Power Supply Resources

	Winter Capability (MW)	Percent of Total
Coal	3,530	60.8
Natural Gas and Oil	1,315	22.6
Nuclear	322	5.5
Owned Hydro Generation	142	2.5
Landfill Methane Gas	29	0.5
Solar[(1)]	0	0.0
Total Owned Resources	5,338	91.9
Purchases[(1)]	471	8.1
Total Resources	5,809	100.0

(1) Santee Cooper currently owns or purchases approximately eight megawatts of solar resources (nameplate capacity) that do not contribute firm capacity at the time of the winter peak.

Figure 2-1 illustrates the retail service areas of Santee Cooper and Santee Cooper's major generation resources.

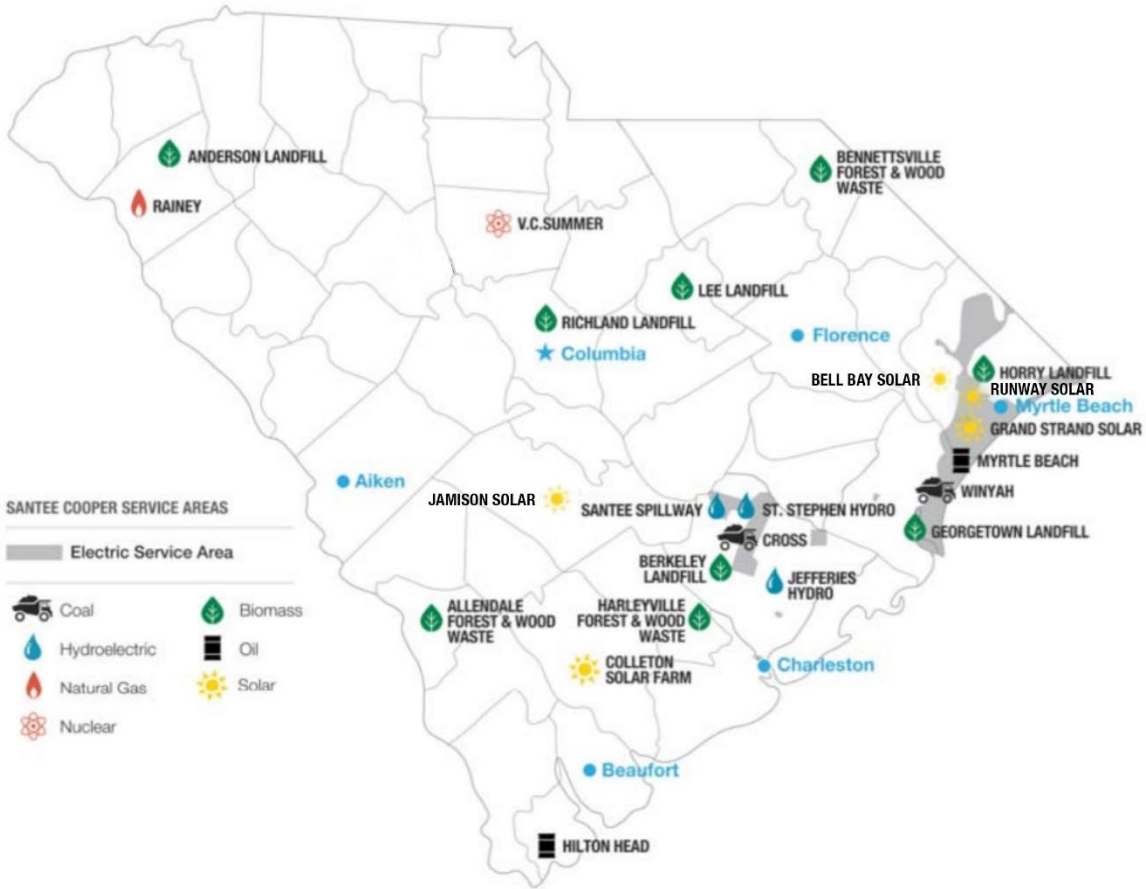

Figure 2-1: Santee Cooper Retail Service Area and Major Generation Resources

Figure 2-2 illustrates the service area of Central, which includes areas throughout the state and adjacent to Duke Energy Carolinas, Dominion Energy South Carolina, Santee Cooper, and numerous municipal utilities, including those served by Santee Cooper.

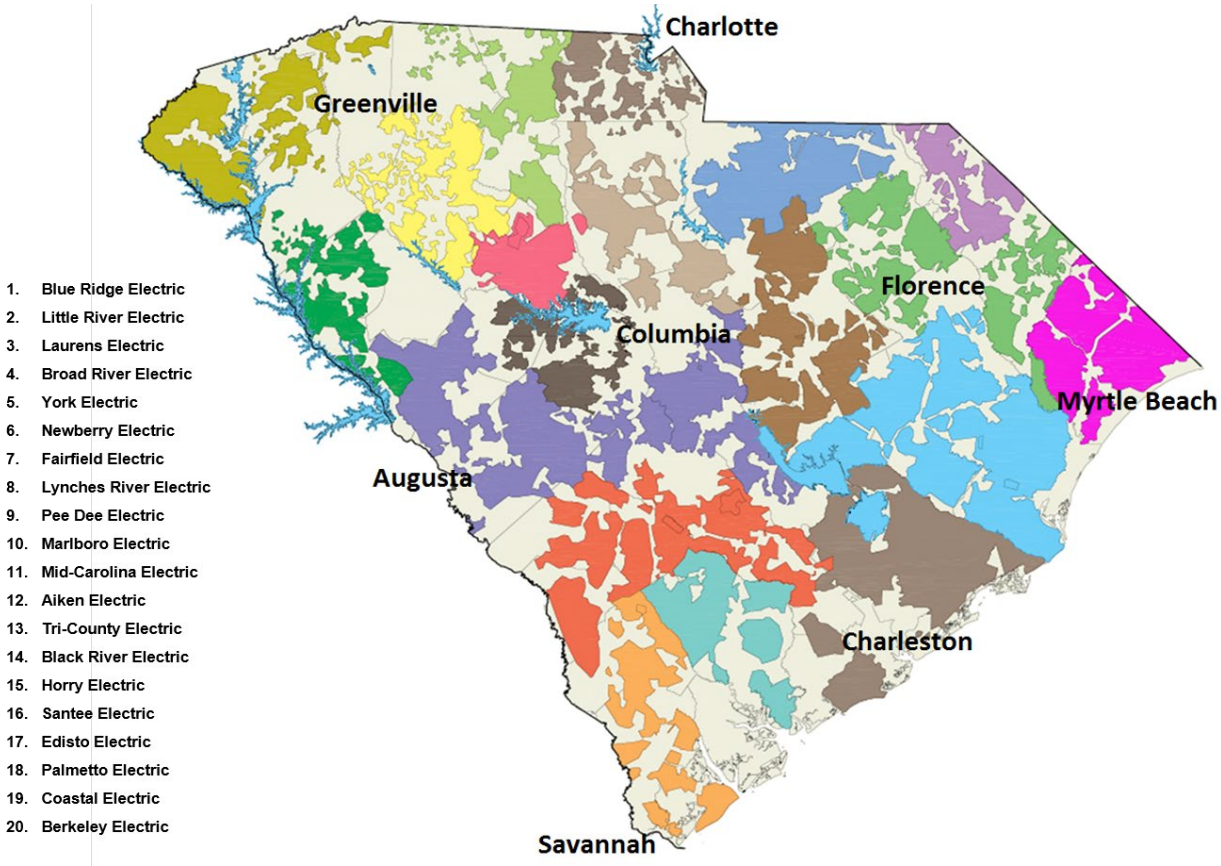

Figure 2-2: Central Service Area

Santee Cooper operates an integrated transmission system which includes lines owned by Santee Cooper as well as those owned by Central and maintained by Santee Cooper. The transmission system includes approximately 1,384 miles of facilities rates at 230 kilovolts, 1,933 miles rated at 115 kilovolts, 1,730 miles rated at 69 kilovolts, and 95 miles of overhead and underground transmission lines rated at 34 kilovolts and below. Santee Cooper operates 91 transmission substations and switching stations serving 87 distribution substations and 411 Central delivery points. Santee Cooper plans the transmission system to operate during normal and contingency conditions that are outlined in electric system reliability standards adopted by the North American Electric Reliability Corporation.

Santee Cooper's transmission system is interconnected with other major electric utilities in the region. It is directly interconnected with Dominion at eight locations (with four additional interconnections currently planned and under contract); with Duke Energy Progress, a subsidiary of DEC, at eight locations; with Southern Company Services, Inc. (Southern Company) at one location; and with Duke Energy Carolinas at two locations. Santee Cooper is also interconnected with Dominion, Duke Energy Carolinas, Southern Company, and SEPA through a five-way interconnection at the SEPA J. Strom Thurmond Hydroelectric Project, and with Southern Company and SEPA through

a three-way interconnection at the SEPA R. B. Russell Hydroelectric Project. Through these interconnections, the Santee Cooper transmission system is integrated into the regional transmission system serving the Southeastern region of the United States and the Eastern Interconnection (one of the three major alternating-current electrical grids in the continental U.S. power transmission grid, the others being the Western Interconnection and the Electric Reliability Council of Texas). Santee Cooper has separate interchange agreements with each of the companies with which it is interconnected which provide for mutual exchanges of power.

The electric generation, transmission, and distribution facilities owned by Santee Cooper, as well as certain transmission facilities owned by Central, are operated and maintained by Santee Cooper as a fully integrated electric system.

Section 3
Santee Cooper IRP Process

Santee Cooper is committed to planning its generation and transmission systems in a manner that will result in affordable and competitively priced electricity service to the wholesale and retail customers of Santee Cooper while maintaining the very high level of system reliability that customers have come to appreciate. Moreover, Santee Cooper is focused on developing plans that will significantly reduce the carbon footprint of its generation fleet and enhance the diversity of its resource portfolio to allow Santee Cooper to adapt to changing market and economic conditions.

Resource Planning Principles

A sound integrated resource plan is built on three foundational characteristics: a broad view about future market conditions, such as fuel prices and customer loads; consideration of cost-effective options for both new and existing resources; and evaluation of resource portfolios against a sound set of resource planning principles. For Santee Cooper, core resource planning principles include the following.

- **Reliability:** Operate and plan the Santee Cooper system to ensure that all retail and wholesale customers are provided reliable electric power — reliability is the number one product of any electric utility
- **Customer Focus:** Provide safe, reliable, and affordable power, and provide customers with new opportunities as markets change
- **Cost Management:** Develop resource plans that provide effective cost management over the long-term
- **Environmental Stewardship:** Responsibly manage the environmental impact of Santee Cooper operations
- **Long-Term View:** Develop a long-term resource strategy to ensure flexibility and optionality over a wide range of possible future conditions
- **Reduce Financial and Planning Risk:** Develop resource plans that can readily adapt as future conditions change and, when possible, add resources in increments that closely match resources to needs
- **Embrace Innovation:** Identify potential developing technologies and incorporate in resource plans when reasonable and cost-effective
- **Transparency:** Engage customers, stakeholders, Board Members, and elected officials in a transparent resource planning process that is responsive to questions and input

Overall, the goal of Santee Cooper is to create a diverse and reliable portfolio of resources that incorporate innovative technologies, improve operating efficiency, reduce environmental impacts, and result in lower overall cost.

Legislative Considerations

Act 95

On May 21, 2019, the State's General Assembly passed, and on May 22, 2019, the Governor signed into law Act 95 of 2019 (Act 95), a Joint Resolution of the General Assembly requiring, among other things, the State's Department of Administration to establish a process: (a) to conduct a competitive bidding solicitation for the sale of some or all of the Authority; (b) to receive management proposals that do not involve a sale of the Authority, but are designed to improve the efficiency and cost-effectiveness of the Authority's electric operations; and (c) for the Authority to submit a proposal to the Department of Administration for reform, restructuring, and changes in its operation as an alternative to a sale or management proposal.

On August 16, 2019, the Department of Administration issued an invitation to interested parties to participate in the process by submitting bids for the sale of some or all of the Authority or management proposals. On November 25, 2019, the Authority submitted its original plan for reform, restructuring, and changes in operation to the Department of Administration, which plan was subsequently modified on January 24, 2020 by the Authority following discussions with the Department of Administration and Central (the Reform Plan). The Authority's Reform Plan identified a series of changes to the Authority's generation and transmission systems as well as expense management and other initiatives intended to achieve cost savings and optimize efficient operations. In addition, the Authority's Reform Plan provided for price stability for the Authority's customers, including Central.

During the week of March 2, 2020, the respective House and Senate committees of jurisdiction made recommendations to their respective legislative bodies to reject all of the bids provided in response to Act 95. Further hearings were held related to reforming Santee Cooper and to continue further bidder negotiations outside the scope of Act 95. Due to the COVID-19 public health emergency and disruption at that time of the legislative session, further consideration of Santee Cooper was suspended as part of the passage of Act 135 of 2020.

Act 135

Section 11 of Act 135 of 2020, a budget continuing resolution that was signed by the Governor on May 18, 2020 (Act 135), establishes certain operational guidelines for the Authority and prohibits the Authority from taking any action which would impair, hinder, or otherwise undermine from an economic, operational, feasibility, or any other perspective the ability of the General Assembly to complete its consideration regarding the Authority's status under Act 95. The provisions of Act 135 not only continue certain of the oversight and operational parameters that limited certain actions that could be taken by the Authority during the Act 95 process but also expressly permit and authorize the Authority to advance some of the key principles set forth in the Authority's Reform Plan. The provisions of Act 135 are to remain in effect through the earlier of May 31, 2021 or until an act of the General Assembly expressly supersedes the provisions of Act 135 applicable to the Authority.

Act 135 authorizes the Authority to continue to operate in the ordinary course of business and nothing in the Act prohibits the Authority from engaging in the following activities related to resource planning and operation.

(1) Doing those things necessary for closing and decommissioning the Winyah Generating Station including, but not limited to, planning, permitting, and securing by purchase or lease one hundred megawatts of combustion turbines and minor transmission upgrades, subject to the consent of Central pursuant to the Power System Coordination and Integration Agreement between Santee Cooper and Central, as amended (the Coordination Agreement).
(2) Doing all those things necessary for deploying up to 500 megawatts of new solar generation, within the structure described in the Authority's Reform Plan, subject to the consent of Central pursuant to the Coordination Agreement.
(3) Entering into operational efficiency and joint dispatch agreements with neighboring utilities for a period of up to one year, with annual renewals and reciprocal cancellation clauses thereafter.
(4) Renegotiating existing and entering into new coal supply, transportation, and related agreements that produce savings and for terms not to exceed five years or such longer period of time as may be approved by a Santee Cooper Oversight Committee (as established by Act 135).
(5) Entering into natural gas hedging arrangements for terms not to exceed five years, or such longer period of time as may be approved by the Santee Cooper Oversight Committee
(6) Conducting the planning, permitting, engineering and feasibility studies to develop natural gas transportation and power transmission to ensure a reliable power supply.
(7) Entering into purchase power arrangements needed for, but not in excess of, anticipated load for a term not to exceed the Settlement Rate Period of the Cook Settlement Agreement, and supportive thereof.

Though the Santee Cooper Reform Plan was ultimately rejected by the legislative committees (along with all other bids), Santee Cooper continues to pursue certain key principles of the Reform Plan while operating under the parameters of Act 135. The Reform Plan contemplated a future power supply plan that is adaptable, allowing the Authority to respond to changing business and regulatory conditions, including (i) improving resource diversity; (ii) reducing carbon emissions; (iii) reducing reliance on coal-fired generating resources; (iv) increasing use of renewable resources; (v) maximizing purchases of low-cost energy from surrounding transmission systems (when available and cost-effective); (vi) developing plans for new generation resources that more closely align resource implementation with projected future loads; (vii) reflecting the need for transmission upgrades; and (viii) continuing efforts to reduce the Authority's indebtedness.

The 2020 IRP has been developed taking into consideration the Reform Plan and within the limitations and allowances of Act 135, including requesting proposals for solar generation within the limits provided for under Act 135, and planning and implementing retirement of the Winyah Generating Station. Santee Cooper has also taken initial planning steps to evaluate options for future natural gas fired generating facilities but understands the Office of Regulatory Staff has noted the need for

clarification on the compliance with Act 135 of this activity. Additionally, while the Act 95 process precluded Santee Cooper from coordinating or discussing its Reform Plan development with process participants, thus precluding coordination with Central, with the passage of Act 135 in May 2020, Santee Cooper began developing its 2020 IRP with participation and input from Central throughout the process. Additionally, while stakeholder outreach has been curtailed due to the limited time available since the passage of Act 135 and the onset of COVID-19, Santee Cooper is committed to expanding its stakeholder engagement process as part of continuing resource planning activities.

Act 62

The South Carolina Energy Freedom Act (H. 3659, R. 82) was passed by the General Assembly and signed into law by Governor McMaster on May 16, 2019 as Act 62. The Act, in part, amended the Code of Laws of South Carolina by adding Section 58-37-40, relating to Integrated Resource Plans to establish mandatory contents of IRPs and provide for certain reporting requirements. Section 58-37-40 requires Santee Cooper to submit an Integrated Resource Plan to the State Energy Office at least every three years. These IRP's are required to be published on Santee Cooper's website and on the website of the State Energy Office. Santee Cooper has developed this 2020 IRP to comply with the requirements of Act 62 and Section 58-37-40, but within the constraints of Act 95 and Act 135, as described above.

The following Table 3-1 outlines specific filing requirements identified by Act 62 and Section 58-37-40 of the South Carolina Code of Law pertaining to Santee Cooper's filing of its IRP.

Table 3-1
Act 62 and Section 5-37-40 IRP Filing Requirements

Act 62 and SC Code of Law	IRP Filing Requirement	Santee Cooper 2020 IRP Report
58-37-40 (A)(3)	The Integrated Resource Plan must be developed in consultation with the electric cooperatives and municipally owned electric utilities purchasing power and energy from the Public Service Authority and consider any feedback provided by retail customers	Sections 3, 4, 5, 6, 7, and 8
	and shall include the effect of demand side management activities of the electric cooperatives and municipally owned electric utilities that directly purchase power and energy from the Public Service Authority or sell power and energy generated by the Public Service Authority.	Sections 4 and 5
58-37-40 (B)(1)	An integrated resource plan shall include all of the following:	
(a)	A long-term forecast of the utility's sales and peak demand under various reasonable scenarios;	Section 4
(b)	The type of generation technology proposed for a generation facility contained in the plan and the proposed capacity of the generation facility, including fuel cost sensitivities under various reasonable scenarios;	Section 6
(c)	Projected energy purchased or produced by the utility from a renewable energy resource;	Sections 6 and 7

Act 62 and SC Code of Law	IRP Filing Requirement	Santee Cooper 2020 IRP Report
(d)	A summary of the electrical transmission investments planned by the utility;	Section 6 and Appendix A
(e)	Several resource portfolios developed with the purpose of fairly evaluating the range of demand-side, supply-side, storage, and other technologies and services available to meet the utility's service obligations. Such portfolios must include an evaluation of low, medium, and high cases for the adoption of renewable energy and cogeneration, energy efficiency, and demand response measures, including consideration of the following: i. Customer energy efficiency and demand response programs, ii. Facility retirement assumptions, iii. Sensitivity analyses related to fuel costs, environmental regulations, and other uncertainties or risks;	Sections 6, 7 and 8
(f)	Data regarding the utility's current generation portfolio, including the age, licensing status, and remaining estimated life of operation for each facility in the portfolio;	Sections 2 and 6 and Appendix B
(g)	Plans for meeting current and future capacity needs with the cost estimates for all proposed resource portfolios in the plan;	Sections 6 and 7
(h)	An analysis of the cost and reliability impacts of all reasonable options available to meet projected energy and capacity needs; and	Sections 6 and 7
(i)	A forecast of the utility's peak demand, details regarding the amount of peak demand reduction the utility expects to achieve, and the actions the utility proposes to take in order to achieve that peak demand reduction.	Sections 4 and 5

IRP Process

Santee Cooper prepared its 2020 IRP utilizing generally accepted utility practices, including the use of overarching principles and objectives, realistic projections of economic and market conditions, historical operating characteristics for existing resources, industry-based assumptions for future resource alternatives, load forecasts developed using industry-standard techniques, integration of cost-effective demand-side management programs, evaluation of renewable and energy storage resources, screening of potential resource sites, simulation of resource dispatch, optimization of resource expansion plans, evaluation of coal resource retirements, and evaluation of resource plan sensitivities to changes in load, market, and regulatory conditions. Figure 3-1, below, provides a depiction of the overall process utilized by Santee Cooper when developing its 2020 IRP, the components of which are described in more detail in the following sections of this IRP Report.

The 2020 IRP was directed and conducted by a team of Santee Cooper staff, assisted throughout the process by nFront Consulting, LLC, an energy industry consulting firm based in Orlando, Florida. Santee Cooper and nFront Consulting worked together to determine the approach, develop

assumptions, model generation dispatch and generation expansion, and review and summarize results of the 2020 IRP. Additionally, the 2020 IRP was prepared in conjunction with Central, including participation by Central's staff and its experts in numerous meetings to develop key assumptions, identify relevant scenarios, and review preliminary and final results. The 2020 IRP was largely prepared during May 2020 through mid-October 2020.

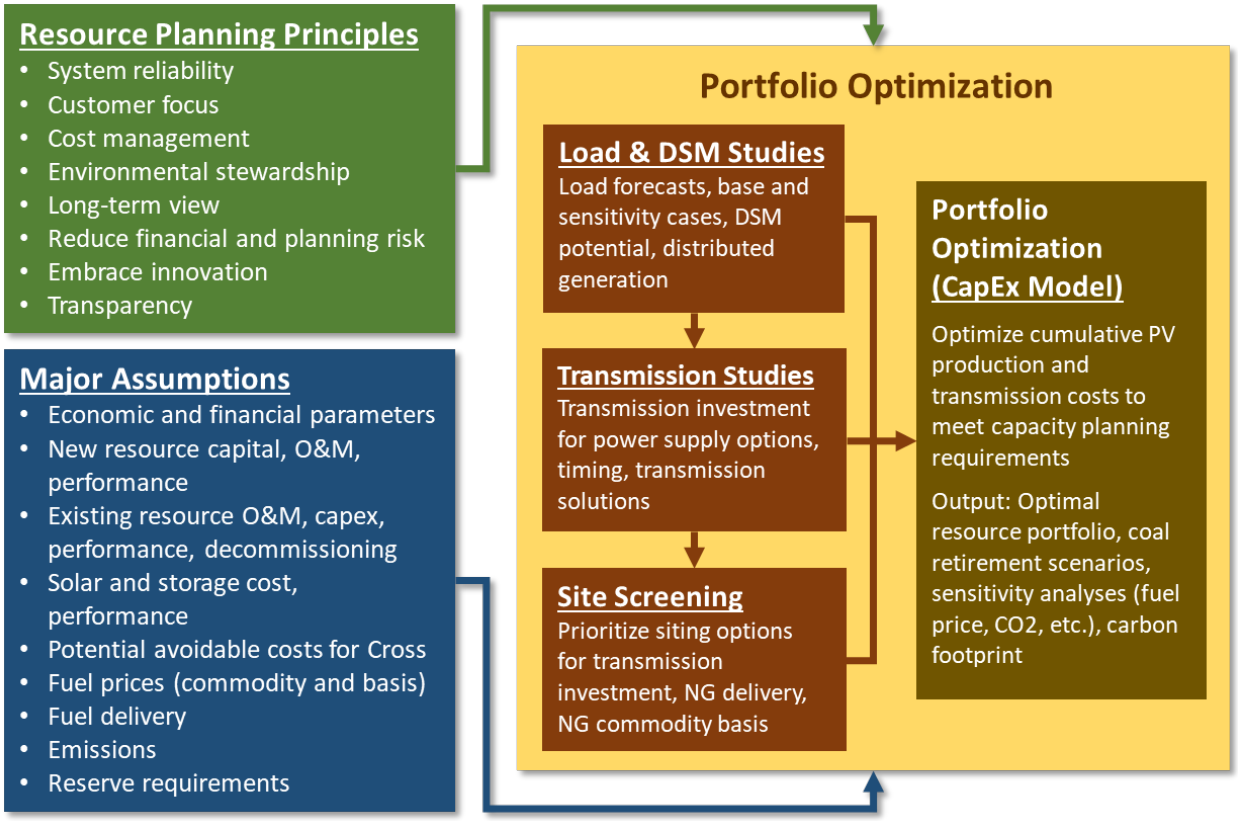

Figure 3-1: Santee Cooper IRP Process